

Fig. 1A

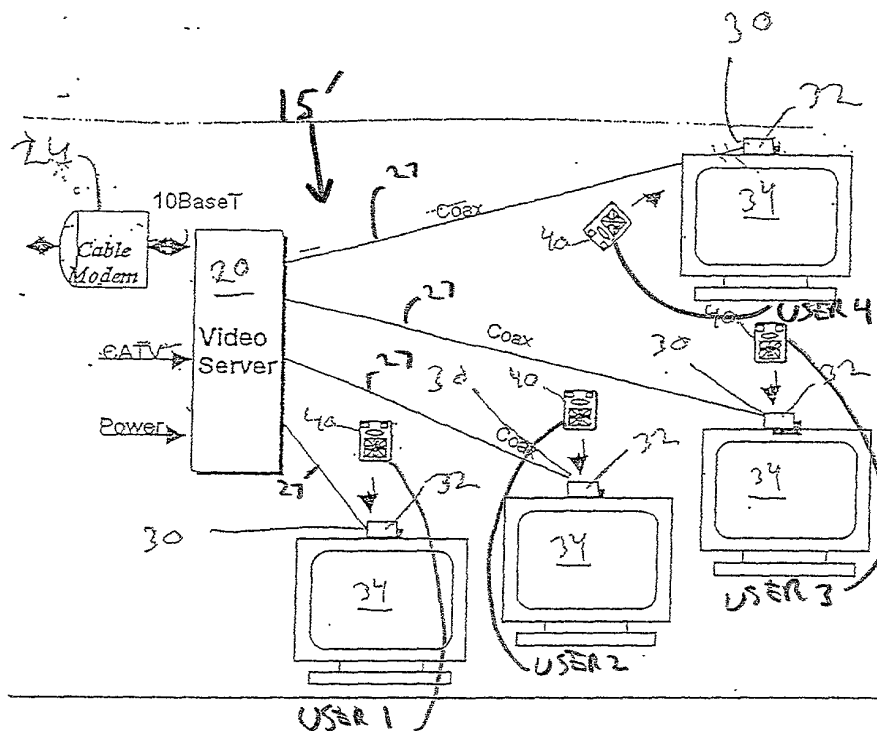


Fig. 18

Parameter	Typical Value
Formatted Capacity	40 GB
Rotational Speed (rpm)	7200
Latency	4.167ms
Number of Discs	4
Number of R/W Heads	4
Sectors per Track (min)	375
Sectors per Track (max)	694
Byte per Sector	512
Number of Tracks per Cylinder	4
Typical Seek Time	10 ms
Head Switch Time	1 ms
Cylinder Switch Time	1 ms
Media Transfer Rate (min)	184 Mb/s
Media Transfer Rate (max)	341 Mb/s
Interface Transfer Rate	86 MB/s
Buffer Size	2 MB

Fig. 4

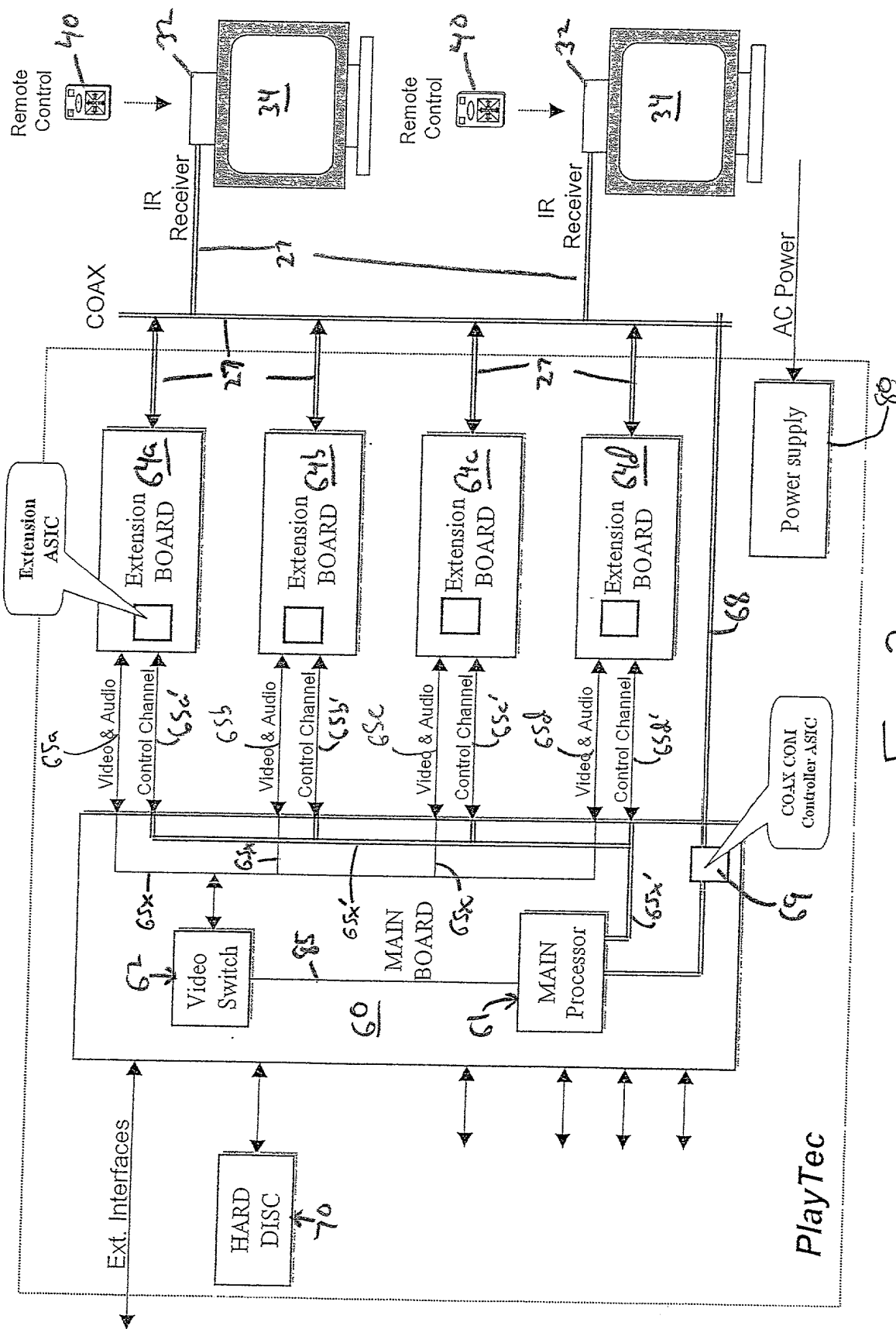


Fig. 2

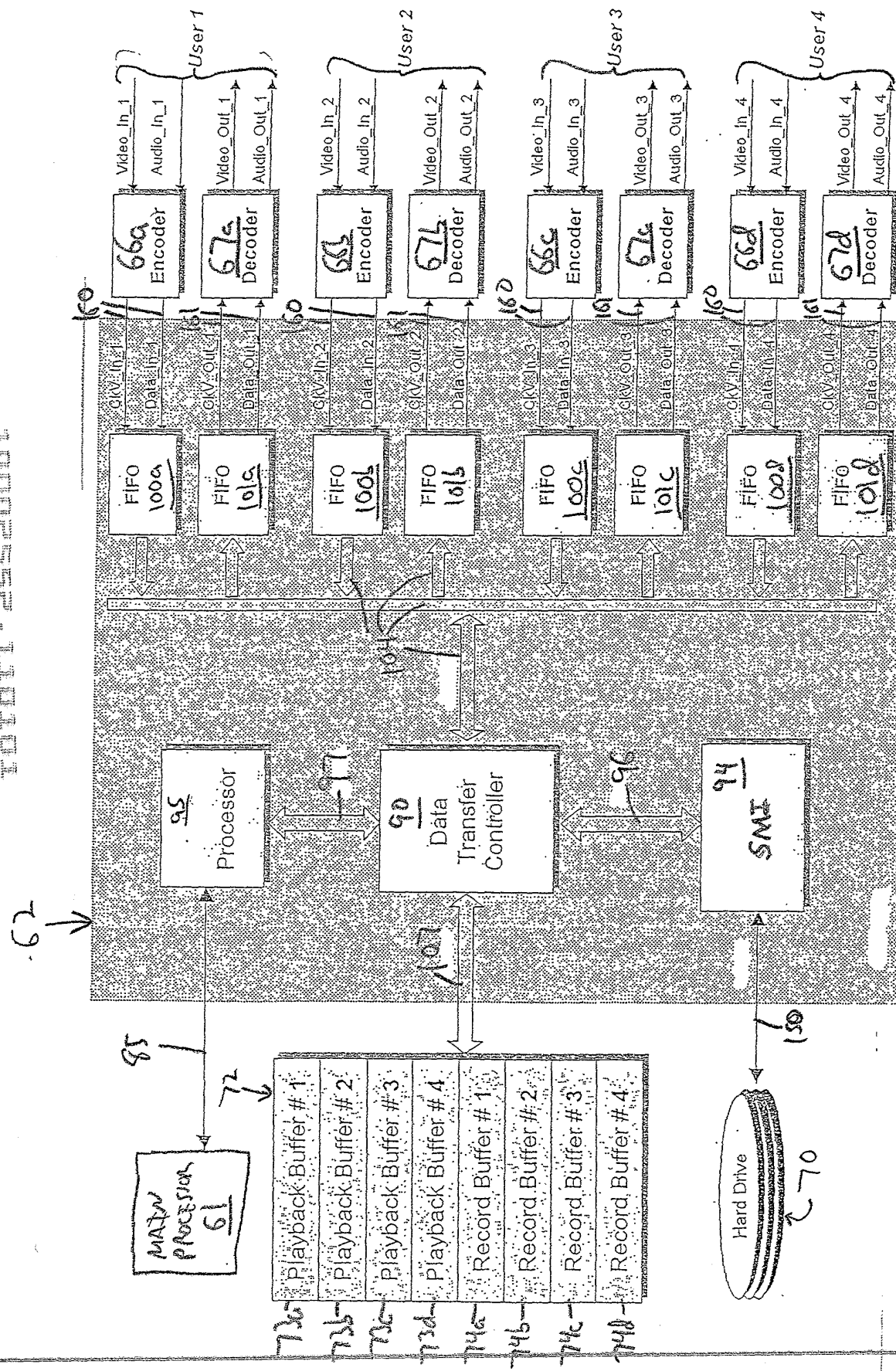


Fig. 3

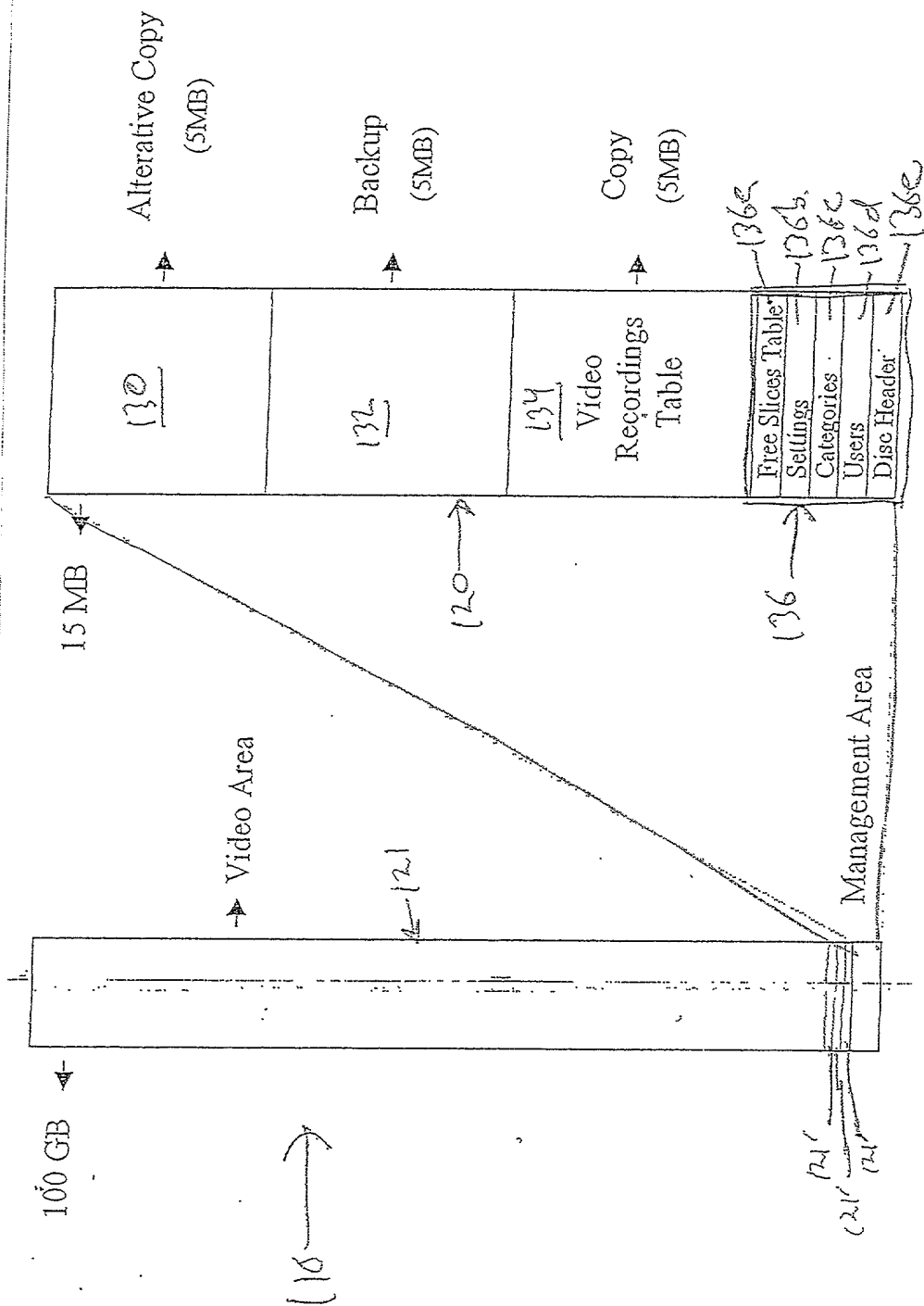
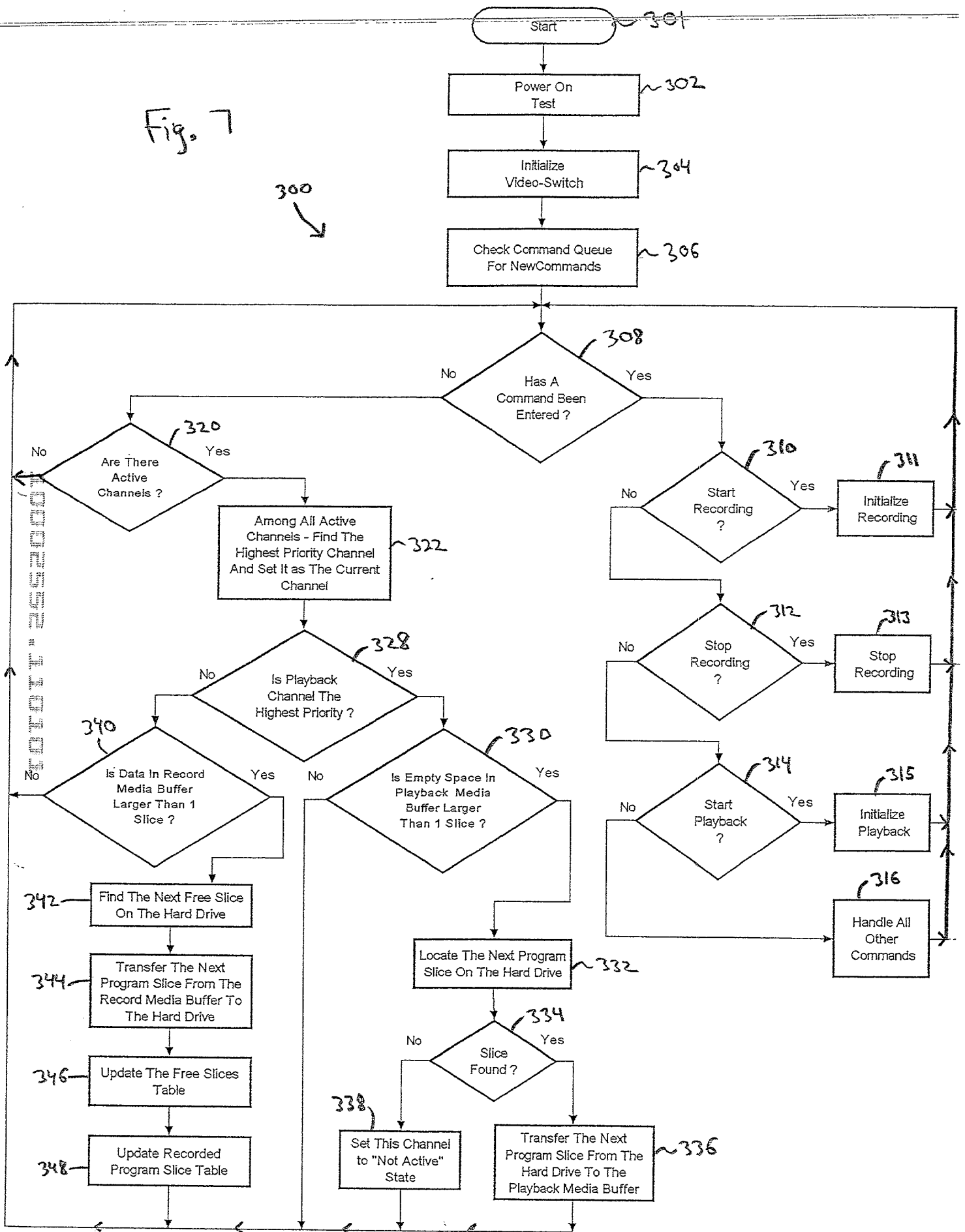


Fig. 5

Fig. 7

300



Find The Highest Priority Channel

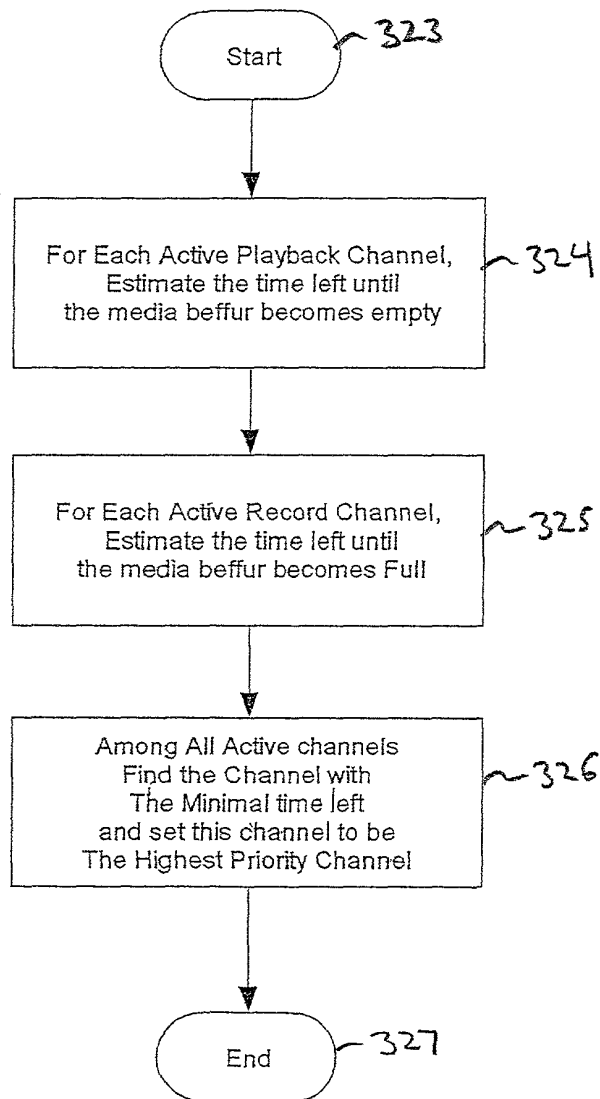


Fig. 8

The diagram illustrates the timing of a 16-bit SDARM data transfer. It shows the sequence of operations: Seek (10.0 ms), Latency (4.2 ms), Internal Media Transfer (8 x 128 KB buffers, 4.0 ms), External Media Transfer (8 x 128 KB buffers, 19.2 ms), and SDARM - Hard Drive Transfer (150 buffers, 2.4 ms). The total extension record slice is 49.2 ms. The diagram also shows the transfer of data from internal buffers to external buffers and then to SDRAM, with a total FIFO update time of 2.8 us.

Timing Diagram Details:

- Seek:** 10.0 ms
- Latency:** 4.2 ms
- Internal Media Transfer:** 8 x 128 KB buffers, 4.0 ms
- External Media Transfer:** 8 x 128 KB buffers, 19.2 ms
- SDARM - Hard Drive Transfer:** 150 buffers, 2.4 ms
- FIFOs - SDRAM Transfer:** 13.2 us
- Total Extension Record Slice:** 49.2 ms

FIFO Update Time Summary:

Operation	Time (us)
One FIFO update time	~ (100 + 3*25) nS = 0.175 us / 16 bytes
Number of FIFOs	~16
Total FIFO update time	~ 2.8 us

Avg. Transfer Rate: 1 MB/49.2 ms = 20.3 MB/s

Fig. 9.

Typical Playback Timing

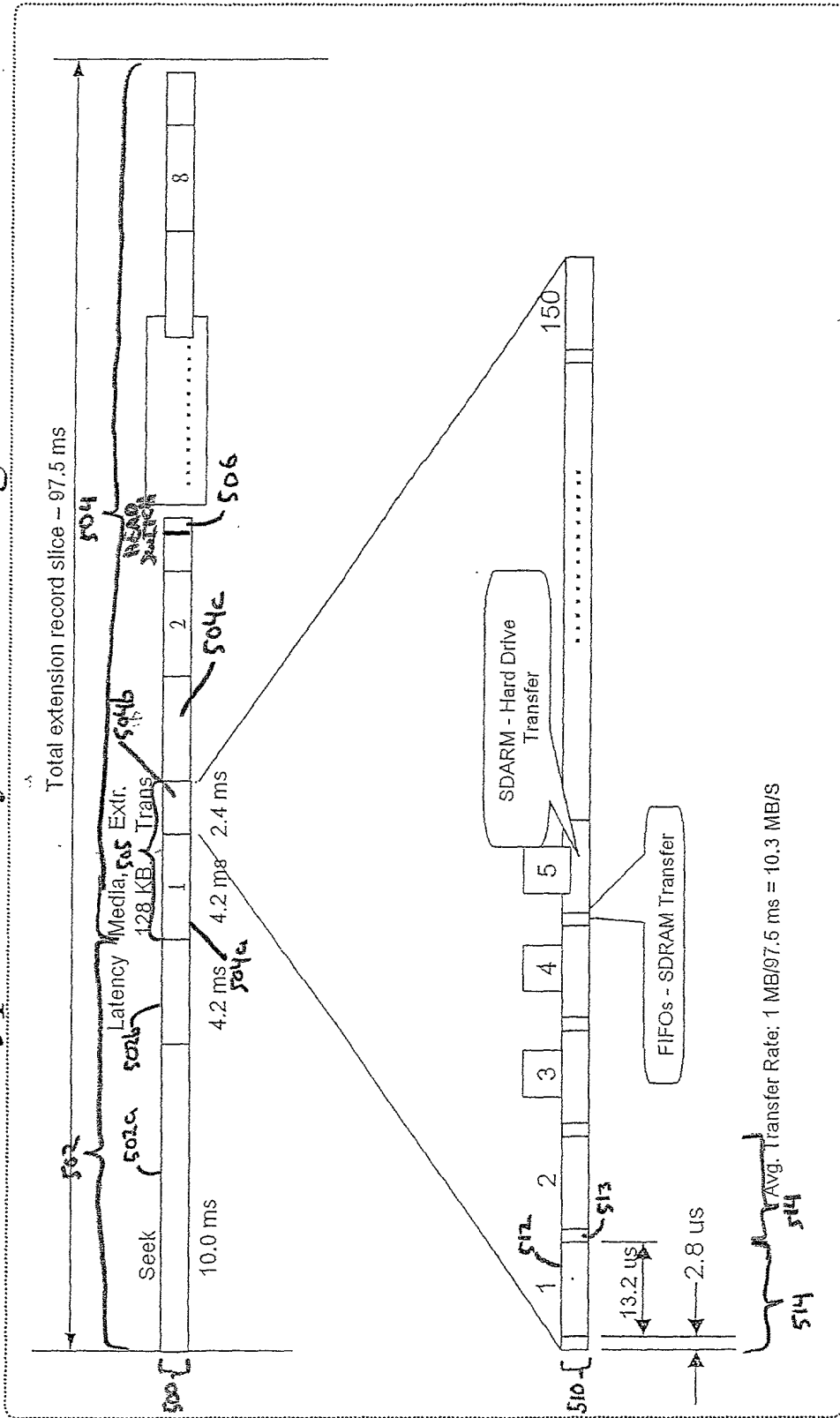


Fig. 10

```
graph TD
    601[ ] --> 602[FIFO_TIMER = FIFO_TIMER - 1]
    602 --> 605{FIFO_TIMER == 0}
    605 -- No --> 603[WAIT A PREDEFINED TIME (FIFO CYCLE TIME)]
    605 -- Yes --> 604[FIFO_TIMER = PREDEFINED_VALUE]
    604 --> 606[FIFO = FIRST RECORD FIFO]
```

The flowchart illustrates the logic for the FIFO timer. It begins with a process box labeled 602: `FIFO_TIMER = FIFO_TIMER - 1`. This leads to a decision diamond labeled 605: `FIFO_TIMER == 0`. If the answer is "No", the flow proceeds to process box 603: `WAIT A PREDEFINED TIME (FIFO CYCLE TIME)`, which then loops back to the start of the dashed box (before step 602). If the answer is "Yes", the flow proceeds to process box 604: `FIFO_TIMER = PREDEFINED_VALUE`, which then leads to process box 606: `FIFO = FIRST RECORD FIFO`.

11A

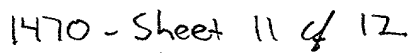


Fig. 113

